

**Bureau of Land Management
Pinedale Anticline Working Group
Meeting Minutes**

Thursday, May 5, 12:00 p.m. and Friday, May 6, 10:00 a.m.
BLM Pinedale Field Office - Rendezvous Conference Room

Action Statements:

1. Possible public forum for the community to discuss what is going on with the BLM. *A dedicated email address for the PAWG has been established and is included in all news releases.*
2. Place meeting agendas and minutes at public library. *Done.*

Thursday, May 5, 2011

12:00 Bart Myers, PAWG Chair, called the meeting to order. Board introductions.

Michael Kramer motioned to accept the February minutes and Cally McKee seconded; motion passed unanimously.

12:10 Key Factors for Successful Advisory Groups/Don Maruska, BLM Consultant

Don reviewed the Key Factors PowerPoint presentation and reminded PAWG they are a vehicle for public input, a channel for communication out to constituencies and a source of advice to the Designated Field Officer. Key Factors for success are to establish clear roles and to focus on topics for which the BLM seeks advice. The BLM provides feedback to the community and targets subcommittees on specific objectives. Hopes for the PAWG are to create an effective way for the public to become informed, provide monitoring and mitigation consistent with the implementation of the Record of Decision, set a clear set of roles and responsibilities for PAWG, PAPO, BLM and other agencies, and have constructive communication with members, BLM, other agencies, and the public. Don highlighted that the PAPO is getting more information on its website and that agencies such as the DEQ, Game and Fish, and others with specific regulatory responsibilities are accessible to the public. He stated the PAWG should focus on monitoring and mitigation relevant to the BLM and that individuals try to relate key topics to real time issues the BLM is working on.

Stephanie Kessler had a concern that 'air' was not mentioned in Don's presentation. Don stated it would be part of a bundle of topics that would be discussed. *Stephanie* also stated it is important to monitor whether the PAWG is fulfilling its commitment to engage the public. She wanted to make sure the new format monitored public participation. *Paul Hagenstein* suggested that air quality be covered during a winter PAWG meeting since it was during the time of ozone problems. *Shane DeForest* stated the topic of air was put where it was because that was when the reports were out from ozone monitoring.

Recommendations from the PAWG: Monitoring of public engagement; Timeliness of public concerns and responses; Fall, winter to identify activities/brief updates; Spring; results and responses; Be clear about time frame for response on advise; Traffic, wildlife killed on road and to possibly contact WYDOT. After some discussion, it was decided to move forward with establishing a way for the public to submit comments directly to the PAWG by setting up a dedicated email address.

1:20 Designated Field Officer Report

Attached

2:00 Break

2:10 Summary of February Wildlife Annual Planning Meeting/Shane DeForest

There were 84 comments from the February Wildlife Planning meeting. Out of the 84 items, 17 ideas were put on a spreadsheet to follow up on: 1. Coordinate with USFS monitoring of mule deer on PXP project; 2. Initiate expanded monitoring of mule deer in the Upper Green River basin; 3. Look for larger scale projects; 4. Continue applying mitigation, monitoring results, and adjusting response; 5. Define MITIGATION; 6. Be thoughtful and deliberate in identifying where to apply mitigation, develop partnerships and coordinate activities across agency lines to leverage limited funds, prioritize projects with proportionally larger and/or broader returns over those with single resource benefit; 7. Be cautious when entering current high use areas, weigh cost/benefit and take lower risks with vegetation manipulation; 8. Focus off-site mitigation treatments in migration routes and higher elevations where better response can be predicted; 9. Complete conservation plans; coordinate regarding seedings and other developments being proposed for conservation plans; 10. Work where the deer are first; 11. Consider other uses and their impacts when identifying mitigation response on mule deer, be sure to consider these impacts in developing mitigation response; 12. Identify priority areas such as winter concentration areas and migration routes where enhanced reclamation efforts can be completed; 13. Look at other non-native species for reclamation which produce higher quality browse and provide for a quicker return to productive mule deer winter range; 14. BLM, WGF work with entities who are drafting ranch plans for the private lands within easement areas, monitoring is already a part of these plans and some soils inventory is already completed; 15. Identify what we are expecting from mitigation projects before we do them, monitor for success, and use the information to adapt future treatments; 16. Undertake habitat condition inventories of un-fragmented habitat; and, 17. Continue utilizing directional drilling technology to address wildlife resources without affecting pace of development or instituting modification of operations before sequential mitigation process is complete.

*Additional information on Actionable Items from the Public Comment Matrix can be found at: http://www.blm.gov/wy/st/en/field_offices/Pinedale/anticline/wildlifemtg.html

2:15 PAWG and Public Comments/ Summary of February Wildlife Annual Planning Meeting

Joy Bannon: How were the public's comments analyzed and considered? *Shane DeForest:* They were incorporated into the minutes and we reviewed them. Then we went into the process of prioritizing those treatments. *Stephanie Kessler:* What is your timeline to have a mitigation response? *Shane:* The initial response can be found in the first project that was approved by the PAPO board this spring. The way the project was set up is that we are transitioning to larger scale habitat improvement projects because of the requirements for public consultation and decision making for environmental assessments, etc. That sort of planning requires time. *Michael Kramer:* Are you working on new seedlings or existing vegetation? Also, what is the purpose of fertilization to address winter habitat? *Shane:* The winter habitat is predominately sagebrush. We are working on lengthening the leaders on it, as well as improving the palatability and vigor of the vegetation. We want to make it a higher quality for the deer. *Stephanie:* Are we putting all our eggs in one basket as far as fertilization? *Shane:* We need to get something on the ground as soon as possible so we can address that. We have to look at longer term habitat improvement opportunities. This year we are going to look at fertilization. Since fertilization is applied from the air we don't have to do cultural clearances or environment reviews for that work. In 2011 we can identify where the best places are for treatments, in 2012 we will begin the scoping process so that we can have decisions in place in 2013. *Joy:* What about adaptive management? *Shane:* The availability of winter exceptions conform to the pace and development and is a piece of the overall plan of development for the Anticline. Taking away those winter exceptions would represent a change of pace in the development which specifically states in the Record of Decision that the sequential mitigation process is to be used before we get to the pace of the development piece. We are not there yet. *Stephanie:* Given the 'not there yet' have we heard from any of the biologists

studying this herd? Is there a population threshold by which we go below that we are not going to bring the herd back? How much time do we have for the 'not there yet?' *Shane:* I think it's important to keep things in context about where we are with wildlife. I do not have the exact numbers. We have reached the mitigation trigger that was outlined in the ROD with respect to the number of deer on the Anticline. That trigger was 15%. At the same time that trigger was being met as a result of the monitoring that we have been doing. Strictly speaking the deer have left the mesa; a possible explanation can be that they died or it could be they displaced off the mesa and are sitting in the ryegrass and Soapholes area. Notwithstanding that at the end of the day the ROD specifies a very specific sequential mitigation process that was to be used at the time the matrix was triggered and that is what we are implementing.

2:25 Report from Water Subcommittee, Presentation of Recommendations

Shane DeForest: As we have seen online there is a cobweb of data and we have heard from the public. I asked for some recommendations from you of what is important, what pieces of the various monitoring report are important to you, and what for the best way to portray the information. I also asked for a template for the brochure that we can provide to the public.

Linda Baker/Upper Green River Valley Coalition: We did some research on monitoring and our purpose was to develop a brief concise template summarizing cumulative and annual water quality reports being generated by SCCD. The subcommittee has met twice and several members gathered information. I also did some research on the history of water monitoring throughout the Green River basin. Primarily the US Geological survey has done a lot of research on the amount of water we have, water uses, quality, recharge and discharge information. I tried to summarize it with citations. Many different agencies have some influence on groundwater. Over the years I've paid attention to the SCCD monitoring and I put together a portion of the monitoring information they created. They originally issued the monitoring information in individual pieces. I tried to put them together in a cumulative way. This just started with water wells that had detects of hydrocarbon. With the information the conservation district provided I added information from the State Engineers office.

Advice from PAWG to DFO regarding Subcommittee Recommendations

Michael Kramer: My assignment was to come up with what we test for, why we test, and the human health effects. The charts are so complex it is a process to try and put all the information in a pamphlet. My suggestion would be to get a technical review team to submit this information to the PAWG and have someone who is a federal employee summarize all this and come up with a pamphlet. I have an outline that I can email to everyone. We are still trying to characterize the aquifer and are studying if there is an impact with the chemicals related to drilling. We want to know what happens if the water exceeds EPA standards. We also want to make sure fracking and drilling fluids are not entering our water system. I asked the gas companies what chemicals are in these fracking fluids and they could not tell me. Again, it could take decades for the water to migrate from lower aquifers that are 10,000-14,000 feet. We get our water from 160-120 feet. Currently there is no indication that there is any contamination. *Cally McKee:* That information is available now. Wyoming has a fairly stringent disclosure process through the Oil and Gas Commission. The master completion plans are on their website, the individual completion report for wells are on their website, the chemicals are listed, their cast numbers are listed, the percentages that were pumped are listed, and their job logs are listed. *Eugene Ninnie:* I think we should also look to the State Engineers office for guidance. *Cally:* I think it is also appropriate to look into the State Engineers office for the construction and integrity of water wells, however, not for gas wells. If you look at the O&G Commission and the BLM, when it comes to the construction for natural gas wells, they are very stringent in their requirements for casings and cementing parameters. *Shane:* We provided the operators with a one year exemption for the collection of data that the SCCD is doing for the industrial wells. By the end of that time if the data has not been

collected by Geomatrix then they have to return back to the industrial well collection methodology.

Cally: I believe they would have to provide a draft to BLM, DEQ, and EPA of a new monitoring plan for water resources on the Anticline. The anticipation is that it would be done and complete for us in time for us to perform monitoring this year. That recommendation will be made in a draft document by BLM, in conjunction with the DEQ and the EPA to finalize as a monitoring plan. *Don Maruska:* Who is responsible for the regulation of water quality? *Linda Baker:* There are different roles and different organizations that are responsible. But ultimately the water belongs to the people of Wyoming. I would like to address the change in the monitoring protocol that was basically done without any notification to the PAWG or to the public. I have a couple concerns. One, we have not had any information from Shell or Geomatrix about the status of their water aquifer characterization recently and that's because there is a third party hired by a regulated operator that isn't required to make that information available. So the public has no way of knowing to be assured that the monitoring data will be available. I am asking the BLM to consider allowing a third party contractor, a hydrogeologist to do that monitoring rather than a company hired by an operator on the Anticline. *Cally:* I think we want to be clear that Geomatrix is drafting a monitoring plan to give to the BLM. BLM will then finalize that plan but in no way implies that Geomatrix was hired to do the monitoring. They are simply drafting a document. *Deb Harris:* Geomatrix is going to do monitoring and an investigation to put this report together for the characterizations then there will be an outcome in those reports. *Linda:* So they are doing the aquifer characterizations with dedicated monitoring wells, in addition, some monitoring wells may be those that are used for other purposes, such as the ones the city has been monitoring. *Deb:* That has not been finalized as far as I know. *Tony Gosar:* Let's talk about the subject of water. When an operator requests an APD (application for permit to drill) that operator is supposed to report any freshwater zones, then that information is hopefully conveyed to the State Engineer, who has the right to give you a company 'go ahead' and drill for subsurface water to be used for drilling for the first 8,000 feet in the Pinedale Anticline. Unless there is an incident in the field 'nobody' has an oversight. *Cally:* BLM does not authorize any use of Wyoming's water. Their only goal is to *protect* the quality of water as we drill it, which is why we drill the first 2500-5000 feet with fresh water. We then case it and cement it. *Shane:* The annual planning meeting is coming up in July and that it might be a better time to have this discussion when there are representatives present. *Linda:* I am concerned with consistency. When the PAWG created the water task group we had a protocol in place that was utilized by the SCCD to monitor. They tried to follow the ROD and monitor for things the ROD required including Betex. Somehow Benzene, which was mentioned in the ROD, was not monitored. Then the water committee started to monitor for Betex in the form of hydrocarbons. And then they changed it to DROGRO and now we are changing it again. I am concerned about the consistency of the program. If we keep changing the protocol then we are not going to have consistency. I am suggesting to the PAWG that the BLM allow the Geomatrix to monitor with a different protocol to be seriously examined.

3:15 Recommendation to the PAWG

Michael Kramer: As a Subcommittee we've gathered all the information we can so my proposal to the PAWG is to form a technical review team under the guidance of the DFO to review all the information we have gathered so far. *Cally McKee* seconded the motion.

3:30 Socioeconomics Report/Roy Allen, BLM Economist

Roy gave a 10-year rolling forecast overview PowerPoint presentation to represent Sublette County. He stressed the importance of consistency in trends and reviewed the 2010 and 2011 forecasts stating he had 100% participation from 19 operators. From 2010 to 2030, operators are anticipating less drilling rigs. *To view the presentation, go to: http://www.blm.gov/wy/st/en/field_offices/Pinedale/pawg.html

4:15 to 4:30 Review of Next Day's Agenda

Paul Hagenstein motioned to adjourn at 4:20 p.m., Stephanie Kessler seconded. Motion passed unanimously.

Friday, May 6, 2011

10:10 Bart Myers called the meeting to order

10:15 Ideas for Engaging the Public/Shane DeForest

1. Target the posting of the agenda two weeks in advance of scheduled PAWG meetings; Identify specific issues or questions for which the DFO is seeking advice; Include links to staff reports, presentations or other materials as background information; Provide an email for interested members of the public to submit comments; In news release, notify the public of the availability of the agenda and supporting information and of the web link which can be used to submit specific comments pertaining to the particular agenda topic.
2. Provide copies of PAWG minutes and post agenda in library.

10:15 Preliminary DFO Response to PAWG Advise on Water Issues

1. Take materials submitted by Water Subcommittee through the PAWG and explore opportunities with partner agencies to develop a "Citizens Guide to Water Quality Management on the Pinedale Anticline" brochure. Topics to include: Who is responsible for water quality? (Elaboration of diagram with roles of various agencies); How is water quality monitored and evaluated and how can you learn more?
2. Request that the SCCD provide a trend analysis of data concerning water quality. Trend analysis means: a year by year comparison of those specific water wells which have experienced a greater than 10% rise in any constituent being sampled between year 1 entry into the program and today, OR any well which has had a detection triggering the voluntary remediation program. Wells which have been removed from the program are not counted, as a "trend analysis" per se cannot be continued.
3. Will request that WDEQ provide a summary statement of water quality and safety for the public and a discussion of what is measured and what is not and plans for consideration of any additional items.

10:25 PAWG and Public Comment/DFO Response to PAWG Advise on Water Issues

Joy Bannon: Are you saying that these are the steps the BLM will take from here or are these actions for the subcommittee? *Shane DeForest:* This is my initial plan to move towards the next step. *Cally McKee:* I think it's an excellent idea to work with partner companies. *Stephanie Kessler:* I'm worried about the brochure title. It seems to represent more than what we are about. I don't know if it reflects the more narrow focus. *Shane:* Maybe it would be better if we gave it a title such as 'Citizens Guide to Water Quality Management on the Pinedale Anticline'. *Tony Gosar:* Are the operators going to use recycled water to drill the first 8000 feet or is it fresh water only? Are they going to plug and abandon the freshwater wells if they don't use them? I would like to make the comment that it is the job of the State Engineer to get the final order to plug and abandon those wells. *Cally:* To say we use fresh water to 8000 feet is a misnomer. We also use 212 water (water that has been processed to drinking water standards). We have also closed a number of wells on the Anticline but we also continue to use a number of fresh water wells. *Paul Hagenstein:* What is the difference between fresh water versus recycled water? Which is the best water to use? *Shane:* That would be a great topic for the Annual Planning meeting in July. They will have a topic on air and water and DEQ will be present.

10:45 Key Questions for Air Quality Issues/Shane DeForest

1. What are your observations or comments regarding specific measures operators are taking to address air quality issues?
2. What are the pros and cons of the various emission strategies?

10:50 Air Quality Toxics Study/Bart Myers

Last month the County Commissioners held two public meetings about Air Quality in Sublette County. One was devoted to ozone and the other was devoted to the Air Quality Toxics Study and Health Risk Assessments. Both meetings were well attended. The Air Toxics study and Health Risk Assessment was a joint effort with the County Commissioners, the State Health Department and the DEQ. The main contribution was funded by the county with almost a million dollars. The monitoring associated with the study occurred over a 14-month period beginning February 2009 to March 2010. There were a total of 14 monitoring stations with 2 located in the Pinedale and Boulder areas. 24-hour samples were collected every 6 days and there were 52 air toxins that were sampled for. The report that was generated as a result of that study indicated the general source of the toxins sampled and the hazards related to those toxins. I encourage everyone to read the Health Risk Assessment on the County website. The conclusion to the study was that there was no short or long term health risks related to air quality in the County for the 14-month sampling period.

*The County Health Risk Assessment can be viewed at: [www.sublettewyo.com/departments/board of county commissioners/health risk assessment](http://www.sublettewyo.com/departments/board%20of%20county%20commissioners/health%20risk%20assessment)

11:00 Presentation for Anticline Operators (Shell, Ultra, Questar)/Jim Sewell

As a company, Shell, we track our water well volume usage with meters. There are also standards the Oil & Gas companies follow as to what is defined as fresh water. Today I am going to cover the background of the operations of the Pinedale Anticline and emission sources. The interest today is what we are doing to reduce emissions, what we have done so far, and what our future plans are. The Pinedale Anticline is one of the top three natural gas fields in the United States and number two in size for Wyoming. 90% of the Pinedale Anticline is on Federal land. In 2008 we had 30 rigs which were all diesel rigs. Currently there are 15 rigs. In 2008 there were approx 950 wells. Today there are 1700 wells. One year ago one rig could drill 8-10 wells. Now a rig can drill up to 15 wells. Nitrogen Oxide forms from combusting/burning organics, examples: wood, fuels, and natural gas. In the field the biggest sources of NOx used to be the drilling rigs. Today the largest source is the various engines, pump trucks, dehydrators, etc. Part of the emission reductions are because of fewer rigs. The technologies that are being applied to the rigs are engine and catalyst technologies. We have been using the technology for over two years now and 8 of the 15 rigs that have been converted are seeing greater than 90% reductions. In 2011 with the full implementation of the Liquids Gathering System I expect the VOC number to go down even further because we are getting rid of condensate storage tanks and the liquid loadings that we used to do at each of our pads. That is now going to central locations. To reduce VOCs we are required to control the emissions from the condensate tanks and check for leaks. The number of leaks has also significantly dropped since the Liquid Gathering System. Eventually, they will be removed. The companies on the south end of the Anticline are working on similar projects and there are some new requirements coming from DEQ.

PAWG and Public Comment/USQ Presentation

John Anderson: Are the estimations actual numbers from samples you took or are they just estimates?

Jim: You can use factors or you can use fuel use. In this case the drilling rigs are very accurate because we get deliveries of diesel fuel and it is inventoried and tracked on a daily basis. That rolls up into a year's worth of gallons used on a rig. We are also required to test those engines on a quarterly basis so we have emission factors developed.

Eugene Ninnie: You seem to have a downward trend of NOx. Can you give any explanation of what happened this last winter?

Jim: You can reduce NOx but still have ozone. You can reduce both components, NOx and VOCs, and it may not do anything. But if you concentrate your mitigation efforts on NOx you can do more to control ozone formations versus if you concentrate all your efforts on VOCs. This is what the models are showing us right now.

Shane DeForest: We focus a tremendous amount of time on the Anticline but we need to remember there are the Jonah and the LaBarge Fields. The work and attention we are giving the Anticline is only one field.

Tom Curry: I have to disagree with you Shane. The Anticline produces more fuel than all the other fields. *Michael Kramer:* Aren't we at a disadvantage to begin with because as you go up in elevation natural occurring ground level ozone increases. Do you know what the baseline ozone levels were before all this started? *Jim:* The levels in the 80s were in the 30s and today they are in the 40s. *John:* What do you monitor on a daily basis? *Jim:* We monitor fuel use, catalyst temperatures, and Urea usage. On a quarterly basis we test emissions and on an annual basis we report emissions. *Stephanie Kessler:* Is there a trend or interest in moving towards natural gas fired generators? *Jim:* You have to be concerned with formaldehyde so you have to put catalysts on them. We did look at the natural gas option. The technology we chose was diesel engines with catalysts and we are actually getting fewer emissions with those. *Michael:* Do you have any estimates of how much VOCs come off of the burners of producing wells? *Jim:* As far as estimates I did not bring the numbers with me. *Don Maruska:* Maybe the bottom line question is if you achieve 80% reductions and all those future targets, does your modeling tell you that you will not have ozone events like we did last winter or do you not know? *Jim:* Right now I don't think anyone has a model for the winter situation here. Ozone forms every day. It's not just us. There are also natural sources and other stuff coming in regionally. It also depends on what our target is as far as air quality. *Dawn Ballou:* I just wanted to comment on what you said about other 'stuff' coming in regionally. Is there any assurance about what is happening in other fields? *Shane:* You touched on two parts. The first part is 'is the BLM requiring that?' The answer to that is the requirement to employ this technology that does not originate from the BLM. It is the DEQ that does that by virtue of their permitting process. The second part to your question, is it happening elsewhere in another state or another field? I cannot answer that but they have the same mandate to use the Clean Air Act.

*A discussion followed regarding how the BLM works with the DEQ and what each organization is responsible for. **For More Information on Balancing the Resources on the Pinedale Anticline go to: www.papaoperators.com

12:30 -1:30 Lunch

1:35 Encana Presentation/Brad Hollenbaugh, Project Engineer

A presentation was given covering emission reduction devices including micro-generators that generate local electricity for other devices avoiding natural gas combustion, vapor recovery units, condensate stabilization and electric dehydrators. Brad stated Encana is going with natural gas engines and using rich burn engines with catalysts. They are also working on numerous pilot test projects that could benefit the future. Brad stressed the Jonah and the Anticline are two different fields. 'We are more of a grass roots field; however the Jonah and the Anticline both have to follow the same requirements as far as monitoring emissions.' Brad closed his presentation and asked the audience to ponder these thoughts:

1. What emissions reduction am I going to get?
2. What is the safety and reliability of my emissions control system?
3. What is the reliability of the production operations?
4. What is the complexity of the equipment and systems?
5. What are the economics associated with it?
6. Specific circumstances and operating parameters in a given field are going to dictate what makes sense in your environment.
7. The best and most creative solution often comes from the operating group.
8. Technology evolves when circumstances change.

2:20 PAWG and Public Comments/Encana Presentation

Joy Bannon: How many pumps do you have per well? *Brad:* We have roughly 1-2 pumps per site. *John Anderson:* Who is doing the research to find out where the ozone is coming from? *Jim Sewell:* There is

a group in Cheyenne working with the State and there are other regulators that are involved as well. Some other organizations are the EPA, the BLM, many of the Gas & Oil Operators, and there is also an organization called the Ozone Advisory Group. They have a section on the DEQ website. There are also a lot of subgroups working on this. *Joy*: do you know what the emissions are in the Jonah field? *Brad*: I don't have a specific number but I can speak in generalities. In 2004 we were roughly 8000 per year. In 2008 that was reduced 50% to 4000 per year. *Tom Curry*: You said that vapor reduction units would offer additional reductions in emissions if it works. *Brad*: Yes, it depends upon which specific project we utilize. *Paul Hagenstein*: What is average depth of the Jonah wells? *Brad*: 10,000 to 13,000 feet. *Joy*: Are the new advancements that you spoke of today going to be added to the NPL? *Brad*: The answer is no. The NPL and the Jonah are two different fields. It is a different infrastructure. *Tony Gosar*: What is the usability of the glycol pumps? *Brad*: Normally the propylene glycol pumps run 5-6 months out of the year. All the savings in emissions reduction are based on these pumps running only during that time. *Linda Baker*: What length of time do you think the pilot projects will last? *Brad*: There is no definite answer but we want to begin implementing these projects in 2012.

2:35 Overview of the Shell and Encana Presentations

Shane DeForest: I noticed some plus' and minus' during the presentations. With the SCRs, on the plus side, it looks like there is a significant reduction in NOx. On the minus side there was a cost, a backlog in availability, they were more technical, there were risks associated, and there were more truck trips involved in delivering the Urea. Next was the catalyst technology for frack engines, electricity conversion for gas operations, and the use of the gas from the pumps and valves for engines. *John Anderson*: I am unclear about using the catalyst technology on the frack engines because there was no presentation on that. So we don't know from those companies what they are doing or what their plans are. *Jim Sewell*: It's very similar to an engine on a frack truck that pumps liquid. It is not a drill rig so we learned a lot of good lessons utilizing the SCR technology on the rigs. One problem is that it is a mobile system and it has height and weight restrictions. It is something we are looking into getting into place next year. *Tom Curry*: I think you stopped completion operations during the ozone. *Jim*: We were completing during the winter months as a short term measure to put operations on standby. *Cally McKee*: That is not true of all operators so depending where you are in the process and what you are doing you may delay a completion activity for a day. It is not a requirement. *Michael Kramer*: Your subcontractors are doing the fracking. Are they as dedicated to reducing the emissions as the operators are? *Jim*: My experience with the drilling side of the business is that I observed the subcontractors are as committed as the operators. They work with us and their engineers work with us. *Paul Hagenstein*: I would like to say that when I can see the Wind River Mountains like I did 60 years ago I will know the mitigation efforts have been successful. *Don Maruska*: What are the things we can do to encourage the operators to be quicker in their pace on doing these things? *Shane*: I have not approached this topic. It is not within the view of the BLM to say what the operators can and cannot do. The operators have expressions of interest in trying to find ways to reduce their footprint on the ground. *Joy Bannon*: I'm not saying we need to go down this road but what I hear you say Shane, is that there is not much the BLM can do however, in the ROD and it states potential mitigation measures include...and then there is a list. *Cally*: Those are mostly things for the DEQ. *Shane*: We are kept up to date when we have various conversations with the operators during annual planning meetings. *Tom Curry*: Not everyone is ceasing completion operations during high ozone alerts. I wonder if it would be feasible to speak with DEQ and recommend they add that to their interim measures. *Shane*: There are opportunities to add that to the contingency plans. I can encourage it but I don't have a regulatory authority to do so.

2:50 Closing Remarks/Don Maruska

Don stated it was phenomenal the energy and attention the PAWG gave to all the topics and issues that were presented today. He stated many good things are happening with public input and with the dedication of the PAWG members and subcommittees. He also stated he was interested in future

comments from the PAWG and wanted to hear more ideas and conclusions to water and air issues. *Joy Bannon:* Don, I thought you provided some structure, which I felt was very helpful. We as a group are just learning and are here to provide advice. What can we provide that would be valuable input? I also observed that DEQ is responsible for a lot of decisions. I wonder if we could have someone here at our next meeting to represent the DEQ. *Don:* You were presented today with two of the toughest issues. When you go to wildlife and reclamation it will be less challenging. I believe the field trips will be interesting and you will find a stronger footing. *Michael Kramer:* Once we find out these trials are better practices for catching emissions and we know it is a proven process, we as a group can make recommendations for future permitting. *Shane DeForest:* To the extent that it would be in my authority. *Cally McKee:* I think if you look at Jim's presentation one of the things we are looking at is the operator's best management practice/group sharing. When Encana learns about a great new low pressure glycol pump and it works for them and they've found a way to put it in cheap that would be something that gets shared among all the operators. *Michael:* If there are best management practices that we have learned about there is no reason we cannot make a recommendation. *John Anderson:* It takes a lot of time to put together a meeting. We should be diligent and get things to Shane in a timely manner. *Dawn Ballou:* Just an observation that the task groups who were eliminated were public people who were very knowledgeable. They would be willing to evaluate the information that was gathered for the various studies.

Dates, Times and Topics for Upcoming Meetings

2011

August 2, 9:00 a.m.	Field trip
August 3, 9:00 a.m.	Wildlife/Reclamation
November 8, 9:00 a.m.	Water

2012

February:	Water
May: (2 days)	Air
August: (2 days)	Wildlife/Reclamation
November:	Overview of monitoring plan/water for November meeting

3:50 Meeting adjourned. Bart Myers motioned to adjourn the meeting. Michael Kramer seconded the motion. Motion passed unanimously.

MEETING ATTENDANCE FORM

PURPOSE: PAWG

TIME: FROM 12:00 TO 4:15

DATE: 5.5.11

NAME	ORGANIZATION
Michael Kramer	Landowner/PAWG
Vandy Mathew	Pine Dale Vandy
Pete Guernsey	QEP
Paul C. WAGENSTEIN	PAWG
Joy Bannion	PAWG / WWF
Kathy Raper	SCCD
Delsa Allen	SCCD
Cally M. Kee	Ultia
Emily Kelley	QEP
Kevin Williams	QL
Margaret Sykes	USG
Stephane Keokur	STWS
Aimee Dawson	Shell
Therese Heitman	WGFD
Clint Crisp	
Jerry Roper	
ALEXIS BERGT	SHELL
Linda Baker	UGRA
Deb Harris	WDER
Tom Curry	PVT
C. S. Samuel	SCCD

MEETING ATTENDANCE FORM

PURPOSE: PAWG Meeting

TIME: FROM 10:00 TO _____

DATE: 5-6-11

NAME	ORGANIZATION
Sally MacKen	CURED 307-367-4570
Kaitun Murray	Pinedale Kandy
Pete Guernsey	QEP
Steff Kessler	TWS
Michael Kramer	Loke Owner
Jim Sewell	Shell
Kevin Williams	QEP
Margaret Spearman	USQ
Tom Curry	Pot.
Dawn Ballou	Pinedale Online
Bob Allen	SUBCUT & MMVIL
Joy Bannon	PAWG; WWF
PAUL Nagersten	PAWG
Jonny Loser	Citigen
Aimee Dawson	Shree
Emily Kelley	QEP
Brad Holtenbaugh	EnCana
ALEXIS BERG	Shell
Clint Gilchrist	
Steve Muckey	